condition was reviewed in 1940 by Mahoney and Chamberlain, and cases have since been reported by Kereszturi (1940), Rosenblatt and Woolley (1943), and Morris (1945). It is one of the causes of large cystic abdominal swellings in female infants, and the rational and only treatment required is excision of the occluding membrane. However, without inspection of the vulva and rectal examination the true pathology is apt to be overlooked, and laparotomy with its attendant dangers in a young infant may inadvertently be employed.

The infant is distressed, and progressive abdominal enlargement and retention of urine are usually conspicuous symptoms. The main abdominal swelling is distended bladder, and after catheterization a much smaller second swelling is noted in the lower abdomen. The vagina is occluded by a bluish membrane which bulges when the child strains, and rectal examination reveals fluctuant distension of the vagina. Mahoney and Chamberlain have drawn attention to the diagnostic value of injecting radio-opaque substances through the point of atresia, and Rosenblatt and Woolley confirm the value of roentgenoscopy in establishing a correct diagnosis.

Hydrocolpos may cause alarming symptoms two days after birth (Mahoney and Chamberlain, 1940), and cases have been recorded in infants of 17 days (Rosenblatt and Woolley, 1943), 7 weeks (Morris, 1945), and 8½ weeks (Kereszturi, 1940). Morris's case of hydrometrocolpos was complicated by hydronephrosis, intestinal obstruction, and oedema of the lower half of the body. An instructive case was reported by Kereszturi in an infant of 8½ weeks. The imperforate condition of the hymen was noted, but was not considered to be of clinical significance. A barium enema showed the colon to be displaced upwards, and intravenous urograms revealed bilateral hydronephrosis with obstruction of the ureters at the uretero-vesical junction. As the infant was losing ground and the diagnosis was "pelvic tumour of unknown origin" laparotomy was performed. A cystic tumour was found filling the pelvis and pushing the bladder upwards and forwards; pressure on this tumour caused bulging of the hymen. Before the abdomen was closed 2 oz. (56 ml.) of milky fluid was released from the vagina by incising the hymen, whereupon the pelvic tumour collapsed. In this case the hydrocolpos and hydronephrosis were complicated by pyelonephritis with severe constitutional symptoms, and the urograms did not return to normal for a period of 15 months.

Spencer (1916) has described mucocolpos in a baby girl, 11 weeks old, in which the condition was recognized before the onset of obstructive symptoms. The mother had noticed a swelling in the vulva which became a little more prominent when the baby cried. An elliptical piece of the imperforate hymen was excised and about 1 dr. (3.5 ml.) of mucus escaped. Spencer stressed the importance of examining as a routine the vulvae of female babies at birth. Unless this is done any vaginal occlusion usually escapes notice until menstruation occurs, and the genital tract may then receive irretrievable damage.

Hydrocolpos in Girls shortly before Puberty

Records of two cases of this type were found in the literature and I have now added a third. The clinical features are indistinguishable from those of haematocolpos, although the absence of monthly twinges of abdominal pain may be significant.

Bowen's (1941) case was that of a girl aged 12 who complained of lower abdominal discomfort and had a soft symmetrical mass extending from the symphysis to the umbilicus. Incision of the vaginal septum released 4 pints (2.27 litres) of milky chyle-like fluid. The girl menstruated

five months later. In Althoff's (1941) case, quoted by Morris, a 14-year-old girl complained of abdominal pain and backache for six weeks. The hymen was imperforate, and when it was punctured 50 ml. of cloudy serous fluid was withdrawn. As the nature of the condition was still in doubt the abdomen was opened and 2,200 ml. of the same type of fluid was obtained by aspiration of a large cyst-like structure which arose from the pelvis.

Summary

Three types of gynatresia are described. They each had distinctive clinical features and were amenable to conservative treatment. Developmental anomalies of this order, though rare, are of much practical interest, for unless recognized they may be submitted to needlessly radical operative procedure.

REFERENCES

- Allen, H. Sandeman (1947). *J. Obstet. Gynaec. Brit. Emp.*, **54**, 377.
 Althoff, F. (1941). *Zbl. Gynäk.*, **65**, 1938.
 Barris, J. D. (1924). *Proc. R. Soc. Med.*, **17**, (Obst. Sect.) 57.
 Bernstein, P., and Walter, R. (1939). *Amer. J. Obstet. Gynec.*, **37**, 126.
 Bonney, V., and McIndoe, A. H. (1944). *J. Obstet. Gynaec. Brit. Emp.*, **51**, 24.
 Bowen, F. H. (1941). *Amer. J. Obstet. Gynec.*, **42**, 144.
 Dobszay, L. (1938). *Amer. J. Dis. Child.*, **56**, 1280.
 Herring, A. J. (1939). *J. Obstet. Gynaec. Brit. Emp.*, **46**, 301.
 Kereszturi, C. (1940). *Amer. J. Dis. Child.*, **59**, 1290.
 Lifvendal, P. (1933). *Amer. J. Obstet. Gynec.*, **26**, 173.
 Mahoney, P. J., and Chamberlain, J. W. (1940). *J. Pediatr.*, **17**, 772.
 Maliphant, R. G. (1939). *J. Obstet. Gynaec. Brit. Emp.*, **46**, 874.
 Monjardino (1936). *Ibid.*, **43**, 1241.
 Morris, Paul (1945). *Amer. J. med. Sci.*, **210**, 751.
 Napoleao, D. (1931). *J. Obstet. Gynaec. Brit. Emp.*, **38**, 692.
 Padovani, P., and Vuillème, J. (1931). *Ibid.*, **38**, 175.
 Rosenblatt, M. S., and Woolley, P. V. (1943). *Ann. Surg.*, **117**, 635.
 Simon, H. E. (1928). *Surg. Gynec. Obstet.*, **47**, 356.
 Spencer, H. R. (1916). *Lancet*, **1**, 823.
 Tait, F. S. (1945). *British Medical Journal*, **1**, 365.
 Wilson, J. St. G. (1925). *J. Obstet. Gynaec. Brit. Emp.*, **32**, 127.

Medical Memoranda

Acute Purpura with Neurological Complications Associated with "Sedormid" Therapy

The following case report seems to be interesting enough to merit publication.

CASE HISTORY

The patient, a woman aged 30, had been admitted to the Bristol Royal Infirmary three months previously for a thyroidectomy, and after her discharge had been given "sedormid" by her doctor. She had taken about 14 tablets at very irregular intervals in the course of two months. Three days before admission she had noticed a purpuric rash on her arms and legs, and on the day of admission she had had haematemesis, haematuria, and melaena.

On examination a widespread purpuric rash was seen; but the spleen was not palpable and there was no enlargement of the peripheral lymph glands. Macroscopic haematuria was present. A blood count showed: red cells, 3,000,000; haemoglobin, 56%; white cells, 3,600, with normal differential count. Bleeding time was 26½ minutes; clotting time, 8½ minutes; clot retraction was very poor. Only one platelet was seen in the whole film and no estimate of their number could be made.

The next day, after a transfusion of 2 pints (1.14 litres) of fresh blood, there appeared a right-sided facial palsy of lower motor neurone type. On the following day dissociated anaesthesia (loss of pain and temperature, normal to cotton-wool) developed on the right side of the face, greater in the first and second division of the trigeminal nerve than in the third. No other abnormal physical signs were elicited, except for the right facial palsy previously noted, but the patient complained of a severe occipital headache and neck stiffness. Three days later she had had no further haemorrhages and her bleeding time was now 8½ minutes, although the platelets were still too few to make an accurate count. Her progress afterwards was uneventful, and on discharge 10 days later the platelets had risen to normal, and her bleeding time was now 4 minutes.

Nine days later she was readmitted, having had a further haematemesis and massive purpura; no platelets were seen in her blood. During the next 13 days she received 11 pints (6.25 litres) of blood—5 pints (2.84 litres) being fresh blood—and at the end of this time the platelets had risen to 3,000 per c.mm. and the haemoglobin

was 90%. Her condition appeared to be satisfactory for three days, but purpura developed once again and she suddenly went into coma the same night and died.

A post-mortem examination was performed by Dr. R. G. Sandry. There were numerous petechial haemorrhages in the skin. Many small haemorrhages were also seen beneath the parietal and visceral peritoneum and pleurae, and beneath the epicardium. The spleen was enlarged to about twice its normal size and the pulp was somewhat softened. Histologically it showed no noteworthy change. The lymph nodes were slightly enlarged and purple in colour. Histologically it was evident that all the glands examined had been draining areas of haemorrhage. The bone marrow of the sternum was abundant and red, containing one area of haemorrhage. There was extension of red marrow down the shaft of the femur. Histologically, specimens of marrow taken from the sternum and from the mid-shaft of the femur were virtually indistinguishable. In both there was some hyperplasia of the erythroid series of cells. Megakaryocytes, although present, were relatively few in all sections examined. The left cerebral hemisphere was the seat of a massive haemorrhage, this being the ultimate cause of death. No haemorrhage, recent or old, could be found in the region of the descending nucleus of the fifth cranial nerve.

DISCUSSION

The first case of purpura due to sedormid (allylisopropylacetylurea) was published by Denig (1933); since then a number of cases have been reported in the literature. An interesting feature of my case was the accidental discovery of a positive Hess test in the patient's sister whilst using her as a fresh blood donor: no abnormality in her bleeding time or platelets was discovered, but it is suggested that there was some familial capillary abnormality in this case, and that sedormid therapy finally produced a further change in platelet production. A fatal relapse of purpura occurring nine days after discharge from hospital without further sedormid therapy is unusual, but it is suggested that the marrow, as evidenced by paucity of megakaryocytes, had been affected by the therapy.

Various therapeutic measures were tried, including blood transfusion, 5 ml. of intramuscular liver, vitamins C, P, and K, and 120 mg. of rutin daily. Rutin, an extract of buckwheat, is stated to have an effect on capillary permeability, but in this case it appeared to have little effect.

I wish to thank Dr. Orr-Ewing for permission to publish this case report, and Dr. Sandry, of the Pathological Department, University of Bristol, for the post-mortem findings.

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REFERENCE

Dennig, H. (1933). *Münch. med. Wschr.*, **80**, 563.

Instantaneous Traumatic Forequarter Amputation of the Right Arm

A search of the literature does not show any reference to traumatic forequarter amputation of the arm. Berman (1945) discusses operative interscapulothoracic disarticulation of the arm. It is considered, therefore, that this case may be worth placing on record.

CASE REPORT

The patient, a healthy miner aged 23, was freeing a coal-conveyor belt which had become clogged with coal at the roller end and had stopped. His right arm was through a hole in the protective grille. The moment the belt was free it began to move rapidly, and the patient's arm was caught between roller and belt and twisted round so that it was avulsed from the body.

On admission to the casualty department he was found to be shocked but not in a serious condition. After the wound had been rapidly inspected for a serious haemorrhage anti-shock therapy was begun, including 2 pints (1.14 litres) of blood and 2 pints of plasma. Two and a half hours later he was operated upon under thiopentone and gas-and-oxygen.

On examination the skin around the shoulder showed an aperture 6 in. (15 cm.) vertically by 3 in. (7.5 cm.) horizontally, with loose and undermined edges for varying distances anteriorly and posteriorly along the chest wall. There was also a flap of skin on the anterior edge which came from the upper arm. Deeper inspection showed that there was no scapula present, and that the lateral half of the clavicle was missing. There had been, in fact, a formal surgical forequarter amputation. It was difficult to insert the hand into the bed of the scapula.

The pectoral muscles had been torn through near their insertion, the serratus anterior could not be found except for a few slips on

the ribs, the latissimus dorsi was quite intact, and only portions of the levator scapulae, rhomboids, and trapezius were found. The avulsed limb was unharmed. The axillary artery had been avulsed about 1½ in. (3.75 cm.) from the first rib; apparently there had been no serious haemorrhage at the time of the accident owing to the avulsion nature of the injury. The brachial plexus had been severed at about the same level as the vessels.

The axillary artery and vein were ligated at the outer border of the first rib. The brachial plexus was cut short and injected with 2% procaine. Haemostasis was then secured at other points. Complete closure was possible, utilizing the flap of skin on the anterior margin of the wound. A drain was passed up into the "axilla" and a coaptation suture was inserted to hold the sutured flaps to the chest wall. Throughout the whole operation the patient's condition remained excellent. Antitetanus and anti-gas-gangrene sera were given and a prophylactic course of penicillin was started.

Complete primary union was secured. The patient was in hospital for 14 days, during which time deep breathing exercises were encouraged. He complained of pain in his "phantom" limb for some time, and when this continued it was considered that the cause might be calcification in the region of the brachial plexus. A radiograph, however, showed complete absence of calcification. The nature of his "phantom" limb was peculiar; he complained that he could feel his hand and forearm but that they were attached to a very short upper arm. It may be noted that it was his hand and forearm which were primarily trapped in the machine.

I wish to thank Mr. L. E. Sutcliffe, surgeon-in-charge of the accident service, for permission to publish, Dr. H. E. Pooler for the administration of the anaesthetic, and the sisters and nurses of the casualty department and accident ward for their help and aftercare of the patient.

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REFERENCE

Berman, J. K. (1945). *Surgery*, **18**, 256.

A Case of Poisoning by Ethylene Trichloride

A boy aged 16 had been employed at a factory for two years where one of the principal jobs consisted in the degreasing of metals by means of ethylene trichloride. Notices to the effect that this substance was dangerous were posted throughout the factory, and the boy had been particularly warned of its danger.

The degreasing of large metal parts was accomplished in a large vat containing ethylene trichloride, but it was possible to draw off the liquid into a bucket by means of a tap at the bottom of the vat, and, indeed, small metal parts were generally cleaned by rinsing them in a bucket containing ethylene trichloride. The vat was accessible to anyone working in the factory. On one occasion a workmate had found the boy smelling the liquid with evident pleasure.

At about 4 o'clock one afternoon the boy was heard to say that he was shortly going home to tea, but an hour and forty minutes later he was found in a lavatory some 30 yards (27 metres) from the vat lying on the floor with his head over a bucket the bottom of which was covered to a depth of 2 in. (5 cm.) by ethylene trichloride. He was dead.

At necropsy he was found to be adequately nourished and healthy. Superficial burns, reminiscent of anaesthetic burns, were seen on the left side of the face. The sweet smell of ethylene trichloride was most pronounced in the brain, lungs, and stomach, and the chief pathological changes were seen in the respiratory tract, where there was acute inflammation of all the air passages and an intense haemorrhagic oedema of the lungs. A little regurgitated vomit was found in the trachea. The cause of death was given as acute pulmonary oedema following the inhalation of ethylene trichloride, and the circumstances left no doubt that the boy had been inhaling the fumes of ethylene trichloride because he liked either the smell or the sensation which they produced.

Addition to ethylene trichloride is mentioned in the M.R.C. Report (No. 80) on the toxicity of industrial organic solvents.

The principal use of ethylene trichloride is as a degreasing agent, for which purpose it is used in the dry-cleaning industry as well as in the treatment of metals. As a solvent of tar and pitch it is sometimes found in certain paints, and it has a limited use as an insecticide.

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